

Jack et al.
U.S.S.N.: 09/738,444
Filed December 15, 2000
Page 2

IN THE CLAIMS

Please amend claims 1-5 and add claims 35-36 as follows:

1. (amended) A method for creating target single strand regions in a plurality of double stranded DNA molecules for use in joining the DNA molecules, comprising:

(a) nicking at least two sites bordering a target region within the DNA molecules with at least one site-specific nicking endonuclease;

(b) subjecting the nicked DNA molecules from step (a) to conditions that selectively denature the target region to create the target single stranded region; and

(c) joining the DNA molecules from step (b) by means of the target single strand regions.

2. (amended) A method of claim 1 wherein the at least two sites bordering the target region are located on a single strand of the double stranded DNA so that the target single stranded region comprises a gap in the double stranded DNA.

3. (Ameded) A method for creating a target single strand region at a terminus of a linear double stranded DNA molecule for use in joining the DNA molecule to a second DNA molecule by means of the single strand region, or for detecting, purifying or selectively mutagenizing the DNA molecule, comprising

Jack et al.
U.S.S.N.: 09/738,444
Filed December 15, 2000
Page 3

(a) nicking at least one site bordering the target region at the terminus of the linear double stranded DNA with at least one site-specific nicking endonuclease;

(b) subjecting the nicked DNA molecules from step (a) to conditions that selectively denature the target region to create the target single stranded region; and

(c) joining the DNA molecule to a second DNA molecule by means of the single strand region, or detecting, purifying or selectively mutagenizing the DNA molecule by means of the single strand region.

4. (Amended) The method of claim 3 wherein the DNA terminus is pre-existing.

5. (Amended) The method of claim 3 wherein the DNA terminus is formed by site-specific endonuclease cleavage.

35. (New) A method for creating target single strand regions in a double stranded DNA molecule for use in detecting, purifying or selectively mutagenizing the DNA molecule, the method comprising:

(a) nicking at least two sites bordering a target region in the DNA molecule with at least one site-specific nicking endonuclease; and

(b) subjecting the nicked DNA molecules from step (a) to conditions that selectively denature the target region for creating the target single stranded region; and